

**NorCal Engineering**  
Soils and Geotechnical Consultants  
10641 Humbolt Street Los Alamitos, CA 90720  
(562) 799-9469 Fax (562) 799-9459

July 14, 1998

Project Number 5936-96

Boeing Realty Corporation  
4060 Lakewood Boulevard, 6th Floor  
Long Beach, California 90808-1700

Attn: Mr. Johnny Marasco

RE: **Observation and Testing of Backfill Operations** - Proposed  
Harbor Gateway - Located at 1414 W. 190th Street, in the City of  
Los Angeles, California

Dear Mr. Marasco:

Pursuant to your request, this firm has observed and tested backfill operations at the above referenced project. Results of the compaction tests are attached and locations of these tests are shown on the accompanying Site Plan. All work was performed in accordance with all present day standards of the Geotechnical Engineering Industry.

**Backfill Operations**

The fill areas consisted of 4 excavations ranging from 40 feet to 50 feet wide by 60 feet to 140 feet long with a maximum depth of 8.5 feet (removed buildings 11, 18, 14, and 15) below ground surface and a trench from a removed fire line 300 feet long by 4 feet deep. The excavations were cleansed of all demolition debris and low density soils to expose competent native soils. The excavation bottoms were observed and approved by this firm prior to placement of fill.

Fill soils placed were compacted to a minimum of 90% of the laboratory standard in lifts not in excess of eight inches in thickness. The maximum depth of fill placed was 8.5 feet. Conventional earthmoving equipment was utilized for compaction control. A water truck provided moisture control. The approximate limits of grading operations are indicated on the attached Site Plan.

### **Field/Laboratory Tests**

The relative compaction was determined by Sand Cone Method (ASTM: D1556-82) and by the Drive Tube Method (ASTM: D2937). The maximum density of the fill soils was obtained by the laboratory standard (ASTM: D 1557-78) with results shown on Table I. Tests were performed a minimum of every 500 cubic yards and every two feet in depth of fill placed. Results of field density tests are presented in Table II. No chemical analysis was performed by NorCal Engineering on the excavations nor the backfill soils.

### **Conclusions**

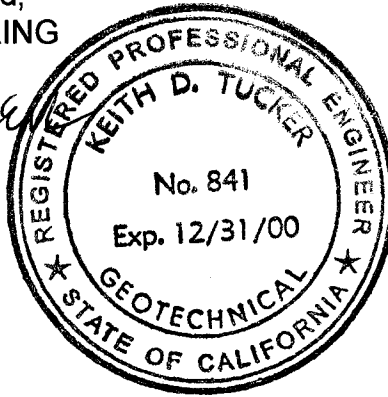
The geotechnical engineering aspects of the backfill operations have been observed and are in compliance with the geotechnical engineer's recommendations. The backfill meets secondary fill requirements for support of pavement and floor slab. The excavations have been backfilled to the approval of this firm and are suitable for their intended use.

We appreciate this opportunity to be of service to you. If you have any further questions, please do not hesitate to contact the undersigned.

Respectfully submitted,  
NORCAL ENGINEERING

*Keith D. Tucker*

Keith D. Tucker  
Project Engineer  
R.G.E. 841



*Mark Burkholder*

Mark Burkholder  
Project Manager

NorCal Engineering

**TABLE I**  
**MAXIMUM DENSITY TESTS**  
**(ASTM: D1557-78)**

<u>Sample</u>	<u>Classification</u>	<u>Optimum Moisture</u>	<u>Maximum Dry Density (lbs./cu.ft.)</u>
I	Clayey silt	12.0	121.0
II	Silty sandy clay with gravel and concrete pieces	10.5	128.0
III	Clayey silt with gravel and concrete pieces	11.0	125.0
IV	Clayey silty sand	14.0	117.0
V	Silty clay with gravel, brick, concrete	13.0	119.0

**TABLE II**  
**COMPACTION TEST RESULTS**

<u>Date of Test</u>	<u>Test No.</u>	<u>Elevation</u>	<u>Percent Moisture</u>	<u>Unit Wt. lbs./cu.ft.</u>	<u>Relative Compaction</u>	<u>Soil Type</u>
7/2/98	101	6.0-6.5	13.5	114.6	95	I
7/2/98	102	4.0-4.5	11.7	121.6	95	II
7/2/98	103	2.0-2.5	11.4	122.9	96	II
7/2/98	104	9.0-9.5	12.6	113.2	94	I
7/2/98	105	10.0-10.5	13.8	111.3	92	I
7/2/98	106	8.0-8.5	11.0	119.2	93	II
7/2/98	107	6.0-6.5	11.7	118.4	95	III
7/2/98	108	5.0-5.5	11.7	112.4	93	I
7/2/98	109	4.5-5.0	12.6	119.0	95	III
7/6/98	110	3.5-4.0	18.3	105.7	90	IV
7/6/98	111	3.0-3.5	12.2	115.9	93	III
7/6/98	112	2.0-2.5	12.7	114.3	91	III
7/6/98	113	0.5-1.0	13.4	116.5	93	III
7/7/98	114	1.0-1.5	11.3	116.8	91	II
7/7/98	115	3.0-3.5	13.4	115.5	92	III
7/7/98	116	1.0-1.5	11.3	116.8	91	II

\*Depth below finish grade (in feet)

\*\*Retest of failing tests after area reworked

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**TABLE II**  
**COMPACTION TEST RESULTS**

<u>Date of Test</u>	<u>Test No.</u>	<u>Elevation</u>	<u>Percent Moisture</u>	<u>Unit Wt. lbs./cu.ft.</u>	<u>Relative Compaction</u>	<u>Soil Type</u>
7/7/98	117	0.5-1.0	10.5	115.8	93	III
7/7/98	118	0.5-1.0	10.7	114.7	92	III
7/8/98	119	7.0-7.5	10.2	113.4	91	III
7/8/98	120	5.0-5.5	11.2	116.0	91	II
7/8/98	121	4.0-4.5	12.0	117.9	94	III
7/8/98	122	3.0-3.5	15.0	111.9	94	V
7/8/98	123	2.0-2.5	12.9	109.8	92	V
7/8/98	124	0.5-1.0	12.6	111.0	93	V
7/9/98	125	4.0-4.5	12.9	111.6	92	I
7/9/98	126	4.0-4.5	13.5	114.5	95	I
7/9/98	127	3.0-3.5	12.7	116.9	94	III
7/9/98	128	2.0-2.5	12.2	115.9	93	III
7/9/98	129	2.0-2.5	12.5	118.7	95	III
7/9/98	130	0.5-1.0	14.2	110.3	93	V

\*Depth below finish grade (in feet)

\*\*Retest of failing tests after area reworked

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## CITY OF LOS ANGELES

### DEPARTMENT OF BUILDING AND SAFETY

#### ENGINEER'S CERTIFICATE OF COMPLIANCE FOR COMPACTED EARTH FILLS

JOB/LEGAL ADDRESS: 1414 W. 190th Street, Los Angeles

SOIL TESTING AGENCY: NorCal Engineering

PROPERTY OWNER'S NAME: Boeing Realty Corporation

OWNER'S ADDRESS: 4060 Lakewood Boulevard, 6th Floor, Long Beach

PER REPORTS ON OUR PROJECT NUMBER: 5936-96

DATE OF WORK STARTED ON PROJECT: 7/2/98

DATE FILL WAS COMPLETED: 7/9/98

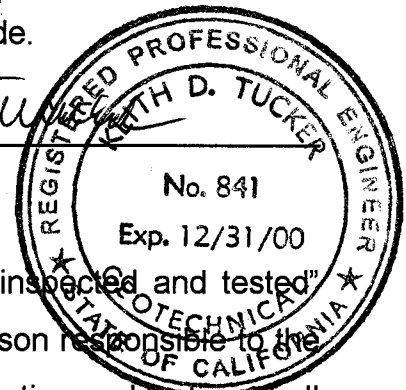
DATE OF THIS CERTIFICATE: 7/14/98

TO THE SUPERINTENDENT OF BUILDING:

I hereby certify that I have personally inspected and tested the placing of compacted earth fill on the above described property, and on the basis of these inspections and tests it is my opinion that the same was placed in conformity with the requirements of the Los Angeles City Building Code.

*Keith D. Tucker*

Keith D. Tucker  
R.G.E. 841



\*For the purpose of this certificate, to have "personally inspected and tested" shall include inspection and testing performed by any person responsible to the licensed engineer signing this certificate. Where the inspection and testing of all or part of the work above is delegated, full responsibility shall be assumed by the licensed engineer whose signature is affixed thereon.

SEE DEMOLITION PLANS - PHASE I

**NorCal Engineering**  
SOILS AND GEOTECHNICAL CONSULTANTS  
BOEING REALTY CORP.  
PROJECT 5936-BBA DATE JULY 1988

LOCATION OF COMPACTION TESTS

## LEGEND

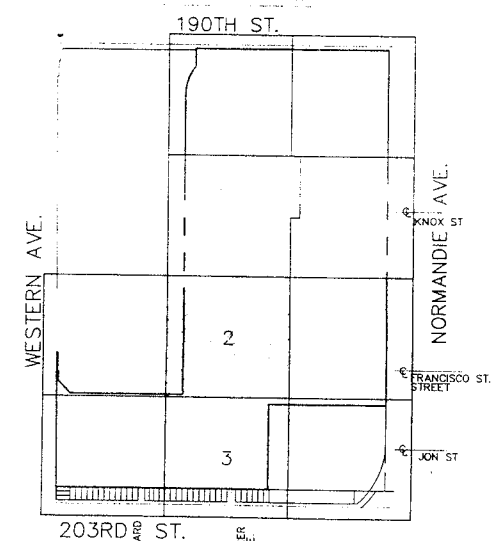
AC ASPHALT  
BSP BACK FLOW PREVENTOR  
CATV CABLE TELEVISION  
CB CATCH BASIN  
C.F. CURE FACE  
C.L.F. CHAIN LINK FENCE  
C.O. CLEAN OUT  
DI DRAIN INLET  
DM DRAIN MAN HOLE  
DM ELECTRICAL METER  
FDC FIRE DEPT. CONNECTION  
FH FIRE HYDRANT  
FS FIRE SERVICE  
GAS GAS METER  
GP GUARD POST  
ICV IRRIGATION CONTROL VALVE  
P POST  
PIV PULL BOX  
PIV POST INDICATOR VALVE  
PP POWER POLE  
SD SIGN  
SD STORM DRAIN  
SLPB STREET LIGHT PULL BOX  
SMH SEWER MAN HOLE  
SS SANITARY SEWER  
FM FORCED MAIN  
ST. LT. STREET LIGHT  
T TELEPHONE  
TSPB TRAFFIC SIGNAL PULL BOX  
U.G. UNDERGROUND  
W WATER  
WM WATER METER  
WV WATER VALVE  
YD YARD LIGHT  
WALL

## PROTECT IN PLACE

- 1 EXISTING STORM DRAIN, MANHOLES & DRAIN INLETS
- 2 EXISTING SEWER MAIN & MANHOLES
- 3 \*HIGH VOLTAGE CONDUIT/VAULTS RUNNING SOUTH TO NORTH FROM DWP SUBSTATION TO HIGH VOLTAGE TRANSFORMER /SWITCH GEAR (BUILDING 4)
- 4 \*HIGH VOLTAGE CONDUIT/VAULTS 25 KVA FROM (BUILDING 4) TO "JUG YARD"
- 5 \*HIGH VOLTAGE CONDUIT/VAULTS FROM (BUILDING 4) TO EAST SIDE OF DENKER (SOUTH END OF BUILDING 19)
- 7 DWP POWER POLES.
- 8 EXISTING CHAIN LINK FENCE
- 9 BUILDING #4

\*NOTE: REMOVE AT BRC DIRECTION, AFTER OVERHEAD POWER LINES ARE INSTALLED (INCLUDING VAULTS EVEN IF BELOW 4'-0" BELOW GRADE)

## INDEX MAP



## CONSTRUCTION NOTES

- 1 CONSTRUCT 7' PERIMETER CHAINLINK FENCE
- 2 CUT & PLUG
- 3 INSTALL TRIPLE COURSE SANDBAGS AROUND EXISTING DRAIN INLETS & REMOVE ANY EXISTING INLET BLOCKING DEVICES

## IMPORTANT NOTICE

Section 4216/4217 of the Government Code requires a Dig Alert identification Number be issued before a Permit to Excavate will be valid. For your Dig Alert ID Number Call

UNDERGROUND SERVICE ALERT  
1-800-422-4133  
For Underground Locating  
2 Working Days before You Dig

## PHASE II

REMOVE EVERYTHING ABOVE GRADE AND TO A DEPTH OF 4' BELOW GRADE IN ACCORDANCE WITH GENERAL NOTES

SEE MATCH LINE - SHEET 3 OF 3

**TAT**  
TAT & ASSOCIATES INC.

AS-BUILT DEMOLITION PLAN - PHASE II

BOEING REALTY CORP.  
4080 LAKEWOOD BLVD., 6TH FLOOR  
LONG BEACH, CA 90808-1700  
HARBOR GATEWAY  
LOS ANGELES, CA

DATE: 12/11/97  
CHECKED: P.C.  
DATE: 12/11/97  
DRAWN: R.N.  
JOB NO: SP3289